



**Clinical trial testing a 1-week course of curative breast radiotherapy
against a standard 3-week schedule in early breast cancer**

The FAST-Forward Trial (NIHR 09/01/47)

Main trial results

The FAST-Forward trial team would like to thank all participants in the trial.

Background

People who have been diagnosed with early breast cancer are usually prescribed radiotherapy after surgery as part of their curative treatment. Radiotherapy uses high-energy waves called x-rays to destroy any cancer cells that may be left in the breast after the operation. Research has shown that having radiotherapy after breast cancer surgery lowers the risk of the cancer coming back, however it may cause some short- and long-term side effects.

Previous clinical trials showed that the same, or even better, results could be achieved with a lower total dose of radiotherapy given in fewer, larger daily doses. The FAST-Forward trial aimed to test whether the number of daily doses could be reduced even further without reducing the beneficial effects of radiotherapy. The majority of patients in the UK who receive radiotherapy after breast surgery have 15 doses delivered over a 3-week period. The FAST-Forward trial compared this 3-week course with 5 doses delivered in 5 days over 1 week.

The FAST-Forward trial tested:

- whether 5 doses delivered over a 1-week period worked as well as the standard 3-week treatment in preventing the cancer coming back
- whether long-term side effects of the 1-week treatments were similar to those from the 3-week treatment

Between November 2011 and June 2014, 4096 patients agreed to participate in the FAST-Forward trial following their surgery for breast cancer. Patients treated at 47 UK radiotherapy centres were included, and received radiotherapy in 1 of 3 ways:

Control Group: 15 daily doses of radiotherapy to the whole of the breast, treating once a day (not weekends) for 3 weeks. This is the UK standard treatment

Test Group 1: 5 daily doses of radiotherapy to the whole of the breast, treating once a day (not weekends) for 1 week

Test Group 2: same treatment programme as Test Group 1 except that the daily dose is slightly lower

The trial included two test groups with different doses as we were aiming to find the 1-week schedule that is most similar to the Control Group treatment.

Participants were seen and assessed by specialists in radiotherapy at their hospital every year after their treatment to assess side effects and see if the cancer had returned. In some centres, patients also had a photograph taken before and after radiotherapy to assess changes in appearance of their treated breast. About half of the trial participants completed questionnaires to provide self-assessments of side effects and quality of life. We have now analysed the results from these assessments to see whether or not the cancer has returned in the treated breast (known as local relapse) and assess side effects several years after radiotherapy. These results were published in a leading international medical journal called The Lancet on 28 April 2020:

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30932-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30932-6/fulltext)

What does the study show so far?

Short-term side effects

Short-term side effects are those occurring during radiotherapy treatment and for a few weeks after. They may include reddening and soreness of the skin, and tiredness. Patients in the 1-week treatment groups had milder short-term side effects than those who had 3 weeks of treatment (these results were published in 2016).

Local relapse

At 5 years after radiotherapy, the total number of patients whose cancer had come back in the treated breast was very low in all 3 groups: around 2 in 100 (2.1%) for the Control Group, and less than this in Test Group 1 (1.7%) and in Test Group 2 (1.4%).

Long-term side effects

Long-term side effects of radiotherapy may include a reduction in the size of the breast, hardening and tenderness in the breast and stiffness over the rib-cage, including the chest muscles. As assessed by both patients and health professionals, the majority of reported side effects up to 5 years after radiotherapy were mild for all treatment groups. Patients in the Control Group and in Test Group 2 experienced similar levels of side effects. More side effects were reported in Test Group 1, although the difference was fairly small.

At 5 years after radiotherapy:

- From the health professionals' assessments, 10% of patients in the Control Group had moderate or marked side effects, compared with 15% in Test Group 1 and 12% in Test Group 2.
- Patients completing the questionnaires were asked whether the overall appearance of their affected breast had changed compared with the other side. 32% of those in the Control Group answered "quite a bit" or "very much" compared with 36% in Test Group 1 and 32% in Test Group 2.

Conclusions

Overall, the FAST-Forward findings suggest that Test Group 2 produces similar results to the standard 3-week treatment, both in terms of cancer coming back to the treated breast and of side effects.

What do these findings mean?

These results are important news for patients with early breast cancer. They show that radiotherapy delivered in 5 doses over 1 week works as well as the current standard 3-week treatment. We recommend that the radiotherapy treatment delivered in Test Group 2 is adopted as the new standard of care for a majority of breast cancer patients. This has major benefits in terms of convenience and costs for both patients and healthcare services globally.

What will happen now?

These are the results 5 years after radiotherapy, but it is important to look at even longer-term effects of the treatment as well. We are continuing to follow-up as many of the trial participants as we can until at least ten years after radiotherapy. We will report on local relapse and side effects again at that point. Further results from the patient-completed questionnaires will be published separately in due course.

As part of FAST-Forward, we are also currently testing 1-week treatment for patients who require radiotherapy to the local gland (lymph node) area as well as the breast. We plan to report these results when we have sufficient data for these patients.

If you are taking part in FAST-Forward and would like further information about the trial please contact your doctor or research nurse at your hospital.

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More information on FAST-Forward is available on the ICR website:

www.icr.ac.uk/our-research/centres-and-collaborations/centres-at-the-icr/clinical-trials-and-statistics-unit/clinical-trials/fast_forward_page